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Bomag bw 120 ad-5 manual

Bomag Road Construction Machines: manuals, technical data, and spare parts for articulated tandem rollers, asphalt finishers, and more Instroytechcom provides a comprehensive range of Bomag machines, vibrating plates, and similar products for various industries such as road construction, hydraulic infrastructure, and landscape design. The company also offers installation services for mobile and permanent asphalt plants from Marini and Ermont. Bomag's compaction technique is widely used in multiple fields due to its effectiveness in soil stabilization and recycling old pavement. Additionally, the company provides specialized landfills of any size with devices for recycling and waste management. With a global presence in countries such as the US, China, France, Italy, UK, Canada, and Japan, Instroytechcom is a leading provider of Bomag products. The company's extensive documentation covers machine operation, maintenance, and safety guidelines, including noise and vibration data, personal protective equipment, and estimated service life. Instroytechcom offers detailed information on safe operating practices, including signal words, emergency stop procedures, and regular inspections. The company also provides guidance on maintenance work, troubleshooting, and repairs to ensure the longevity of its machines. Given article text here Table of Contents: Technical Data and Safety Regulations 1. Technical Data: * BW 120 AD-5 (pages 15-17) * Noise and vibration data (page 20) * BW 100 AC-5 (pages 22-25) * BW 120 AC-5 (pages 27-25) 2. Safety Regulations (page 33) 3. Display and Control Elements: * General notes (page 61) * Description of indicators and control elements (page 62) * Instrument cluster (page 74) 4. Operation: * General information (page 78) * Tests before taking into operation (page 79) * Electronic immobilizer (page 81) * Adjusting the driver's seat (page 82) * Starting the engine (page 83) * Driving the machine (pages 86-88) * Stopping the machine and operating the parking brake (page 89) * Shutting down the engine (page 90) * Switching the vibration on/off (pages 92-95) * Operating the Economizer (page 97) * Switching the pressure sprinkling system on and off (page 101) * Switching emulsion sprinkling on/off (page 104) 5. Additional Settings: * Setting the crabwalk (page 105) Table of contents for machine maintenance and transportation, including emergency procedures, tool mounting, precision spreader operation, towing, loading and transporting the machine, and general notes on maintenance. This includes sections on preparing for transport, lashing the machine to a vehicle, erecting the foldable ROPS, and running-in instructions. Regular maintenance is crucial for optimal performance. After 50 operating hours, check the engine oil level, fuel level, hydraulic oil level, and coolant level. Every 10 operating hours, inspect the air filter, fuel lines, water separator, and precision spreader (if equipped). Every 50 operating hours, clean or replace the air filter, check fuel lines, and clean the water separator. Every 250 operating hours, change the engine oil and oil filter cartridge, tension and replace the V-belt, clean the radiator and hydraulic oil cooler, service the battery, inspect radiator hoses, and adjust scrapers if necessary. Every 500 operating hours, drain the fuel tank sludge, replace the fuel filter, check the anti-freeze concentration, and inspect the protective canopies. Maintenance Schedules and Troubleshooting Procedures Every 1000 operating hours: Check valve clearance, inspect engine mounts, and verify travel control. (p. 191) Every 2000 operating hours: Change hydraulic oil and breather filter, replace hydraulic oil filter, and change coolant. (p. 194) Every 3000 operating hours: Inspect fuel injection pump and perform maintenance as required. (p. 203) As required: Check tire pressure on AC machines, maintain water sprinkler system in case of frost, tighten screw torques for metric unified thread, and conserve engine life. (pp. 204-206) Troubleshooting Procedures General notes: Follow safety guidelines during troubleshooting. (p. 210) Starting with jump wires: Identify and diagnose engine problems. (p. 211) Engine problems: Troubleshoot fuse assignment, central electric, and main battery fuse issues. (pp. 213-218) Disposal Final shut-down of machine: Properly shut down the machine to ensure safe disposal. (p. 220) This manual focuses on safety guidelines, operating instructions, and maintenance procedures for BOMAG's soil compactor machines. It covers essential topics such as handling the machine safely, avoiding malfunctions through proper operation, and maintaining reliability with regular upkeep. The content also includes troubleshooting tips to help users resolve any issues that may arise. It's crucial to note that compliance with these instructions is vital for ensuring the longevity of the machine, reducing repair costs, and preventing damage due to improper use or maintenance. BOMAG emphasizes the importance of adhering to standard operating procedures and using original spare parts from their company to maintain safety and efficiency. The manual also touches on the availability of service kits and technical support from authorized dealers for customers' specific machines. Machine type plate and engine type plate for BW 100 AD-5 / BW 120 AD-5 / BW 100 AC-5 / BW 120 AC-52 The machine's weighted effective acceleration value, as per the ISO 7096 and EN 500/ISO 5349 standards, is $\leq 0.5 \text{ m/s}^2$ and $\leq 2.5 \text{ m/s}^2$ respectively. The guaranteed sound power level for vibration of the entire body (driver's seat) is significant. The technical data sheet details dimensions such as length with precision spreader (optional equipment), height with protective roof and flashing beacon (optional equipment), and weights including maximum operating weight, operating weight with ROPS (CECE), mean axle load (CECE), and mean static linear load (CECE). Travel characteristics include speed ranges for operation and working speeds with vibration. The machine is powered by a Kubota D 1703-M-E3B engine, which provides rated power according to ISO 14396 and SAE J 1995 standards. Additionally, noise and vibration data were determined in accordance with specific guidelines under equipment-specific conditions, indicating potential risks including loss of hearing due to excessive noise burdens, prompting the recommendation to wear personal protective outfits (ear defenders). Weighted effective acceleration value $\leq 0.5 \text{ m/s}^2$ (ISO 7096) Weighted effective acceleration value $\leq 2.5 \text{ m/s}^2$ (EN 500/ISO 5349) Max. operating weight: 2800 kg Operating speed: 0 - 10 km/h (0 - 6.2 mph) Technical specifications for a machine: - Operating protective gear is necessary. Sound level: 103 dB(A). Vibration data: weighted effective acceleration $\leq 0.5 \text{ m/s}^2$ (ISO) or $\leq 2.5 \text{ m/s}^2$ (EN/ISO). Weight and dimensions: max operating weight 2950 kg, operating weight with ROPS 2450 kg, height with roof 2890 mm. Travel speed: up to 10 km/h. Working speed with vibration is the same as travel speed. Vibration specs: - Weighted effective acceleration $\leq 2.5 \text{ m/s}^2$ (EN/ISO). Machine specifics: - Engine: Kubota D 1703-M-E3B, 24.3 kW (32.6 hp) power. - Exciter system: vibrating drum front with frequency of 63/67 Hz and amplitude of 0.5 mm. - Sprinkler system: water sprinkling system with filling capacities for fuel (35 l), water (160 l), and emulsion (45 l). Noise and vibration data were measured according to EC Machine Directive, Noise Emission Directive, Noise Protection Directive, and Vibration Protection Directive. Values may vary during operation due to environmental conditions. Warning: Excessive noise levels can cause hearing loss! Wear personal protective equipment (ear defenders) when operating this machine. Noise data: LpA = 83 dB(A), determined according to ISO 11204 and EN 500. Vibration data: The weighted effective acceleration value is $\leq 0.5 \text{ m/s}^2$, according to ISO 7096, and $\leq 2.5 \text{ m/s}^2$, according to EN 500/ISO 5349. Sound pressure level on the operator's stand: Guaranteed sound power level. This BOMAG machine complies with technical standards and regulations. However, potential dangers can arise if it is used for purposes other than intended, operated by untrained personnel, or modified in an unprofessional manner. To avoid accidents, follow safety regulations and guidelines, including applicable accident prevention instructions, generally accepted safety and road traffic regulations, and country-specific safety regulations. Intended use: Compaction of bituminous material, such as road surface layers, and light to medium compaction work in earth construction or road sub-bases. Failure to comply with intended use may result in unintended consequences and liability. Potential hazards include vibration on hard concrete, cured bitumen layers, or extremely frozen ground, and cleaning the drums while operating the machine. When operating the machine, be mindful of potential hazards such as changing nozzles during travel, driving on subsoils with low load-bearing capacity, slippery surfaces, or insufficiently sized surfaces that may lead to overturning. Additionally, avoid passing over high borders like curbstones, embankments, trenches, or potholes. Refrain from unauthorized use of public roads and roads, except for authorized personnel. Transporting persons other than the machine driver is prohibited. When operating in explosive environments or underground mining, the machine must not be started or used. Although careful work and adherence to safety regulations are crucial, it is still possible that unforeseen dangers may arise when handling the machine. All system components comply with current safety regulations, but remaining risks cannot be completely eliminated. Remaining dangers can also occur outside the actual danger zone of the machine. Individuals in this area must remain vigilant and prepared to respond immediately in case of a malfunction or incident. It is essential that all persons in the vicinity are informed about the potential hazards associated with the machine's operation. Regular inspections by an expert (capable person) are required, at least once every year, depending on the machine's operating conditions. Only trained, instructed, and authorized personnel aged 18 years or older are permitted to operate the machine. Responsibilities must be clearly defined and complied with. Operating the machine while under the influence of alcohol, medicine, or drugs is strictly prohibited. Maintenance and repair work require specialized knowledge and can only be performed by trained specialists. Unauthorized changes to the machine are prohibited for safety reasons. Original parts and accessories have been specifically designed for this machine. The manufacturer has not tested or approved any non-original parts or accessories. Installing or using such products may compromise active and passive safety. Regular safety inspections are essential. Machines that are not secure to operate should immediately stop working and remain unused until safety issues have been resolved. Essential safety features should never be removed, tampered with, or disabled. Critical warnings: Potential hazards for people are highlighted in red text, while potential dangers for machines or parts of the machine are marked in yellow. Important notes on safe operation and environmental practices are contained in green text. Please adhere to regulations protecting the environment. Caution: Misuse of safety features can cause damage, deficiencies, or injuries during operations and maintenance. Follow strict guidelines for operating and maintaining equipment, as outlined in the safety instructions (BW 100 AD-5/BW 120 AD-5/BW 100 AC-5/BW 120 AC-5). When loading a machine using a ramp, ensure it's stable, has sufficient load-bearing capacity, and the incline is not steeper than the machine's gradability. Keep ramps free of grease, oil, snow, or ice, and empty the precision spreader before transporting the machine. Optional equipment, such as laterally offset precision spreaders, should be secured in their middle position before loading and transport to prevent the machine from tipping or sliding off. Always keep a safe distance during demonstrations and when loading the machine. Secure the machine with its articulation lock after placing it on a transport vehicle. For crane loading, only attach lifting tackle to loads by qualified personnel. Always empty the precision spreader and return laterally offset spreaders to their middle position before transporting. Engage the articulation lock and use suitable lifting gear that can support at least the operating weight of the machine. Check all lifting points and fastening elements for damage before lifting, as using damaged or impaired equipment is dangerous. When transporting the machine, ensure it's secured with suitable lashing gear on its lifting points to prevent jerky movements and maintain safety. Check all lashing points before securing the machine to ensure they are not damaged. Always apply the articulation lock for transport and lash the machine down to prevent rolling, sliding, and turning over. The precision spreader must hang freely without any support or contact with the transport vehicle. Never attach the lashing gear to the precision spreader. After transport, operate the machine only with the foldable ROPS properly secured and fastening screws tightened according to the specified torque. If using optional equipment, release the articulation lock and store it in the receptacle after transport. To secure the machine during towing: * Apply metal wheel chocks or use a tow bar provided by the operating company * Use a towing vehicle with sufficient traction and braking power for the unbraked load * Tow at 1 km/h max, only out of immediate danger zones due to heat damage With the precision spreader attached, do not tow backwards. After towing, apply metal wheel chocks or use a tow bar to secure the machine. Before reoperating the machine: * Fill and bleed the hydraulic circuit * Ensure the ROPS frame is not warped, bent, or cracked * Check for rust, damage, hairline cracks, or open fractures on the ROPS * Do not exceed the testing weight for the ROPS When towing the machine: * Regularly check the ROPS for rattling, indicating improper fastening * Ensure all bolted connections comply with specifications and are absolutely tight * No accessories may be welded or bolted without manufacturer consent Before using this machine, familiarize yourself with its equipment, controls, and working principle. Ensure your personal protective gear is worn, including a hard hat, safety boots, and ear defenders. Before mounting the machine, check for: - No people or obstructions in the surrounding area - The absence of oily and combustible materials nearby - Clear paths around grips, steps, and platforms - A closed and locked engine hood When starting the machine, verify: - There are no obvious faults - All guards and safety elements are intact - Steering, brakes, control elements, lights, and warning horns function correctly - The seat is adjusted correctly and mirrors (if present) are clean and adjusted Avoid starting with defective gauges or control elements. Never start the machine without wearing your seat belt on machines with roll-over protection systems. To operate safely: - Start from the driver's seat only - Set all controls to 'neutral position' before starting - Do not use starting aids like a start pilot or ether - Ensure adequate ventilation when working in enclosed spaces When connecting jump wires, connect plus to plus and minus to minus. Always disconnect the ground strap first. In closed rooms and trenches, ensure an adequate supply of fresh air and wear your seat belt while operating. Be cautious of persons in the danger area and give warning signals as needed. During operation: - Wear your seat belt - Avoid driving on bases with insufficient load-bearing capacity - Do not drive on ice or snow - Stop immediately if you encounter people in the danger zone despite warnings Immediately stop the machine in case of an emergency. Never use the emergency brake as a service brake. Restart the machine only after the danger has passed. If the machine has contacted high-voltage power lines: stay at the operator's stand, warn others not to approach or touch the machine, and try to move it out of the danger zone if possible. Have the power switched off before operating the machine from the driver's seat. Only adjust the driver's seat when stopped, never while driving. Never climb onto or off the machine while in motion. Follow safety regulations BW 100 AD-5 / BW 120 AD-5 / BW 100 AC-5 / BW 120 AC-5. Only change direction at a complete standstill. Do not use the machine to transport people. If you notice unusual noises or smoke, perform troubleshooting and have the fault corrected. Always maintain a safe distance from excavation walls and embankments, avoiding methods that could compromise the stability of the machine. When passing through subways, under bridges, tunnels, electric power lines, etc., keep a safe distance. Driving on inclines and slopes: avoid gradients exceeding the maximum gradability of the machine. Drive carefully up or down slopes directly, changing to a lower gear before starting. Be cautious when driving on wet or loose soils, as they can significantly reduce ground adhesion and increase the risk of accidents. The tipping angle was measured in static conditions on level, hard ground with the machine stopped, no steering, and without vibration. The maximum permissible inclination may be limited by the maximum permitted slanted position of the engine. Never exceed this specified angle. Loose soil, acceleration/deceleration, running vibrations, steering, or attached accessories can significantly lower the tipping angle. Avoid driving across slopes as it poses a high risk of tipping over and severe accidents. Instead, drive straight up or down a slope. For rollers with a drum width of 1 m or less, there is a significant risk of tipping near edges (e.g., curbstones, embankments, trenches, potholes) when driving over these edges. In traffic: match your speed to the working conditions, avoid extreme steering movements at high speeds as it increases the risk of tipping. Always yield to loaded transport vehicles. Turn on lights if visibility is poor, keep away from edges and embankments, and do not drive on public roads with the machine. When operating a spreader, ensure it's laterally extended and check for vibrations' effects on nearby structures and underground supplies. If necessary, stop work or adjust compaction methods to avoid damage. Never compact with vibration on hard concrete, cured bitumen, or frozen ground. Before leaving the machine: * Neutralize travel lever and apply parking brake * Shut down engine and remove ignition key * Mark any obstructed machines with a visible sign When parking on slopes, use metal wheel chocks to secure the machine. Refuel only with the engine off and avoid inhaling fuel fumes. Ensure proper grounding and equipotential bonding during refueling, as ultra-low sulphur diesel fuels pose a higher risk of ignition. Monitor the process, catch any spills, and keep dirt and water away from fuel tanks. In case of fire or explosion risks, familiarize yourself with fire fighting equipment, report fires immediately, and follow all safety protocols. When mounting or removing the precision spreader: * Park machine on a level surface and shut down engine * Ensure empty spreader before pulling out bolts * Use lifting tackle and shackles to lift loads carefully • Original: Before operating, check lifting points for damage and do not use them if they are damaged or impaired. Rewritten (SE): Befor operatin, chek liftn points 4 damag and dont us them if ther ar damagd or impairedd. • Original: Always lift the machine with suitable lifting gear that meets the required load-bearing capacity. Rewritten (NNES): Always lift the machine with proper lifting equipment which can handle the weight properly. • Original: The precision spreader should only be lifted with safe and effective lifting gear, and never swing about while being lifted. Rewritten (IB): When operating the precision spreader, it is crucial to use suitable lifting gear that ensures stability and prevents the machine from swinging or moving unpredictably. • Original: Park the precision spreader on level and firm ground to avoid accidents. Rewritten (SE): Park the precision spreder on levil and firmd grnd to avoide accidents. • Original: Do not fill the hopper with more than 200 litres of chipping material, as it may exceed the permitted total weight. Rewritten (NNES): Do not put too much chippin material in the hopper, or else you will go over the safe weight limit. • Original: Always empty the spreader shaft area when the engine is shut down to avoid injury. Rewritten (IB): It is essential to evacuate the spreader shaft area completely when operating the machine, as any remaining hydraulic oil can pose a serious risk of scalding and skin penetration. • Original: Never enter the spreader shaft area while it is running or under pressure. Rewritten (SE): Nevur entur the spreder shaft arae whil it iz rannin or undir presher. • Original: Comply with the maintenance work described in the operating and maintenance instructions, including part replacement. Rewritten (NNES): Please follow the maintenance guidelines outlined in the operator's manual to ensure proper function and longevity of the machine, including regular replacements of worn-out parts. • Original: Park the machine on horizontal, level, firm ground before performing any maintenance work. Rewritten (IB): Before starting any maintenance or repair work, make sure the machine is securely parked on a flat, level surface to prevent accidents and ensure safe working conditions. Always check all connections and fittings for leaks when the system is still depressurized! Regularly inspect hydraulic hoses visually to ensure their integrity. Replace them immediately if: • The outer layer is damaged, cracked, or shows signs of chafing. • The outer layer appears brittle with visible cracks. • The hose displays deformations in both pressurized and depressurized conditions that deviate from its genuine shape. • Leaks are present, or the hose shows signs of damage, such as squeezing, buckling, or layer separation. Additionally, ensure that: • Fittings are not damaged or deformed, impeding proper function and strength. • Hoses are correctly installed and not mixed up by mistake. • Only genuine replacement hydraulic hoses from BOMAG are used to guarantee the correct hose type and pressure range for each location. Before working on the engine: • Shut down the engine before opening the hood to avoid scalding. • Drain the oil at operating temperature, wiping off any spills. Dispose of used filters and materials environmentally. When working on electric parts: • Disconnect the battery and cover it with insulating material before starting work. • Follow safety regulations 50, BW 100 AD-5/BW 120 AD-5/BW 100 AC-5/BW 120 AC-5/AC-5 to ensure a safe and proper procedure.